



DOE/EM-0488

U.S. Department
of Energy

Leading the Way



in Pollution Prevention

The photographs on the cover illustrate the Department of Energy's Pollution Prevention/Waste Minimization Hierarchy (from least preferred method to most preferred method):



Drums at the Rocky Flats Environmental Technology Site are stored prior to disposal. Disposal is the least preferred method of pollution prevention/waste minimization.

A supercompactor at the Oak Ridge National Laboratory compresses barrels containing radioactive solid waste to one-fifth their original size. This is an example of volume reduction.



Scrap metal from the Fernald Environmental Management Project is recycled by fabricating molten metal into a plate that will become part of a waste shipping container.



Parts of a crane are decontaminated for reuse in the Hanford Site's 270-T decontamination bay. Decontamination for reuse is an example of segregation.



A Contaminated Area Rollback (a procedure to reduce the size of a radioactively-contaminated area) is in progress at the Savannah River Site. This is an example of source reduction, which is the Department of Energy's preferred method of pollution prevention.

This Report was prepared by the Albuquerque National Pollution Prevention Program for the Office of Environmental Management, Washington, DC, and has been reproduced directly from the best available copy.

Additional information is available from:

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DOE Pollution Prevention Web Site Address:
<http://www.em.doe.gov/wastemin> (select "EM-77 Web site") or <http://twilight.saic.com/wastemin/>

Foreword

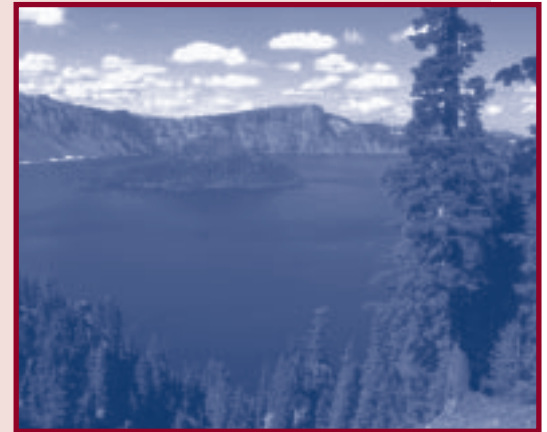
It is an American tradition that our government should protect and serve the people. Over the course of the 20th century, as technology has advanced and priorities have changed, the Department of Energy's (DOE) mission has also changed.

When DOE assumed its responsibility of securing our national defense through nuclear weapons production, America was in a race to protect its freedom by winning the Cold War. Fifty years later, this mission has evolved from production to stewardship, from secrecy to an open partnership with the public that DOE serves.

Pollution Prevention is defined as an activity that reduces or eliminates the release of pollutants and waste into the land, air, or water. DOE's efforts in pollution prevention began with the Office of Defense Programs in 1988. In 1994, DOE published its first Waste Minimization/Pollution Prevention Program Plan¹, which established DOE's core value of respecting the environment by reducing or eliminating the creation of pollutants or waste at the source.

In 1996, DOE published its Pollution Prevention Program Plan², which outlined specific goals issued by the Secretary of Energy for reducing waste generation and the use and release of toxic chemicals. Goals were also issued by the Secretary for increasing recycling and the purchase of environmentally preferable products. The Plan outlined steps to be taken by the DOE Complex to meet these goals through cost-effective business practices that would preserve the environment for future generations.

DOE has successfully developed and implemented new processes and business practices, resulting in significant cost savings, without compromising our environment. The following pages present an overview of DOE's achievements in waste reduction, cost savings, avoided waste management costs, and environmental preservation, and outline the challenges that lie ahead as the Department strives to be a leader in pollution prevention.



As this century draws to a close, it's clear that the Department of Energy has been a leader in developing cost saving strategies to preserve the environment.

¹ The Waste Minimization/Pollution Prevention Program Plan 1994, DOE/FM-0145.

² The Pollution Prevention Program Plan 1996, DOE/S-0118.

Building the Foundation for Pollution Prevention

Accomplishments

Office of Defense Programs

- Provides pollution prevention policy and oversight to the weapons complex
- Conducts pollution prevention workshops and publishes *ESAVE (Environmental Stewardship & Value Engineering, formerly known as the Pollution Prevention Advisor)*
- Conducts pollution prevention employee awareness training for entry-level employees through senior management level employees

Office of Environmental Management

- Provides funding, direction, and acts as an external liaison for DOE's national pollution prevention program
- Tracks Complex-wide pollution prevention progress through the collection of data via the Internet (<http://twilight.saic.com/wastemin/> or <http://www.em.doe.gov/wastemin/>), and publication of the *Annual Report of Waste Generation and Pollution Prevention Progress*
- Provides pollution prevention policy and oversight to Office of Environmental Management sites

Office of Science

- Developed and maintains the EPIC data base and Web site to promote pollution prevention information exchange (<http://epic.er.doe.gov/epic/>)
- Promotes material exchange and recycling of surplus materials between sites to minimize waste
- Provides pollution prevention policy and oversight to Office of Science sites

Pollution prevention doesn't just happen. DOE's Program Secretarial Offices, and in particular, the offices of Defense Programs, Environmental Management, and Science (formerly the Office of Energy Research), make a tireless effort to create and maintain a strong foundation for the program. This foundation includes a Web site for DOE sites to report annual waste generation data and quarterly pollution prevention projects. Data collected through this Web site are analyzed and presented in the *Annual Report of Waste Generation and Pollution Prevention Progress*.

Another Web site, the DOE Pollution Prevention Information Clearinghouse (EPIC), was created to

facilitate information exchange between federal, state, and local government agencies, as well as with industries, academic institutions, and the general public. This Web site provides access to federal and state pollution prevention regulations, DOE pollution prevention policy and guidance, site project summaries, and important contacts. Another important component of EPIC is to promote material exchange and recycling of surplus materials between DOE sites.

Information exchange within the DOE Complex is facilitated by pollution prevention workshops and annual conferences.



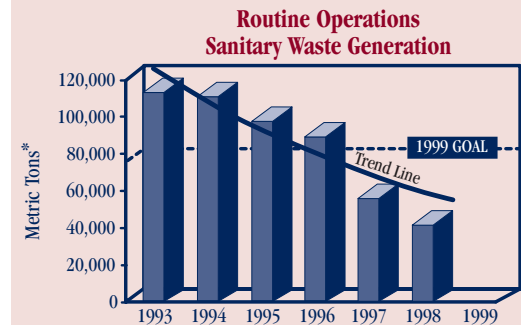
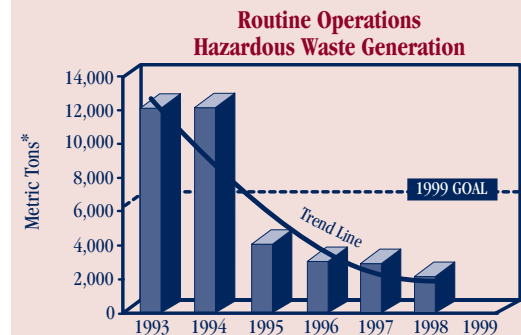
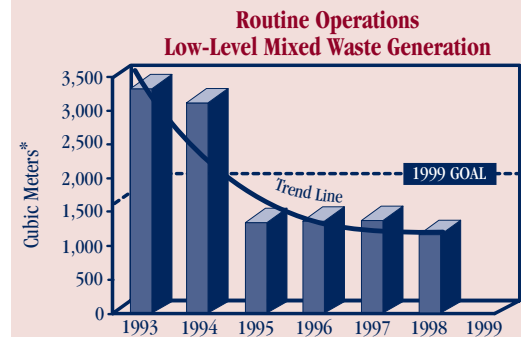
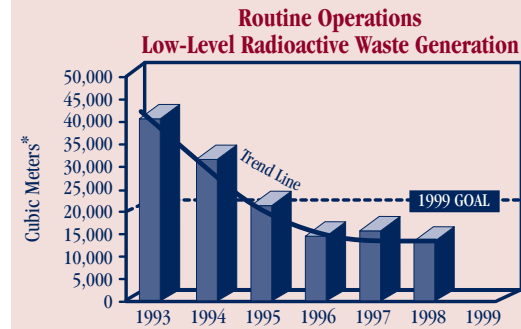
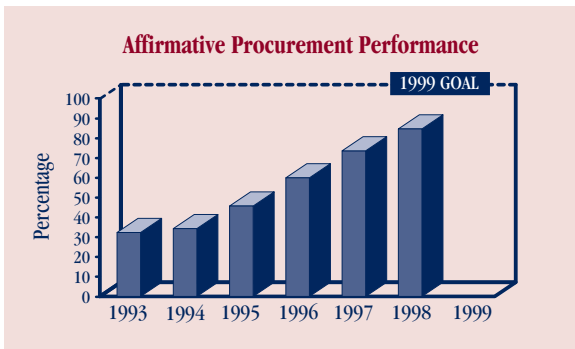
Complex-Wide Waste Generation and Pollution Prevention Progress

The *Pollution Prevention Program Plan 1996* outlines waste reduction goals issued by the Secretary of Energy. These goals require the Complex-wide reduction of routine operations low-level radioactive, mixed, and hazardous waste by 50 percent, and routine operations sanitary waste by 33 percent, compared to the 1993 baseline. The Secretary also set an annual goal to recycle 33 percent of all sanitary waste, and prioritized the aggressive implementation of pollution prevention projects to achieve all of the goals by December 31, 1999.

Based on 1998 data, DOE can report that it has achieved its waste reduction goals ahead of schedule, and pollution prevention projects implemented from 1996

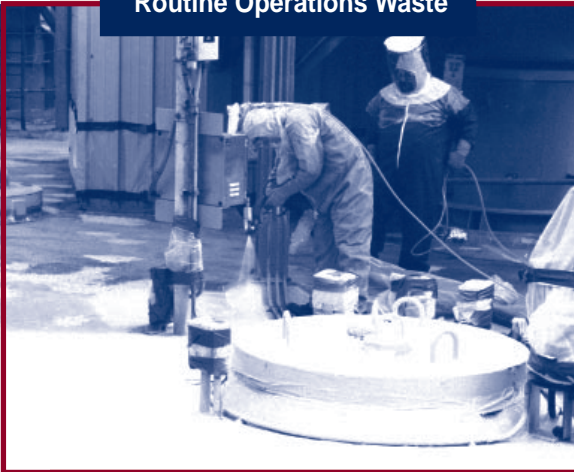
through 1998 have avoided more than 390,000 cubic meters of waste, for a reported cost savings/avoidance of \$405 million.

Another goal published in *The Pollution Prevention Program Plan 1996* is for Affirmative Procurement (the purchase of environmentally preferable products). The Affirmative Procurement goal mandated by Executive Order 12873 (superseded by Executive Order 13101), requires that DOE increase its purchase of Environmental Protection Agency-designated recycled products to 100 percent by December 31, 1999, except when items are not commercially available competitively at a reasonable price, or do not meet performance standards.



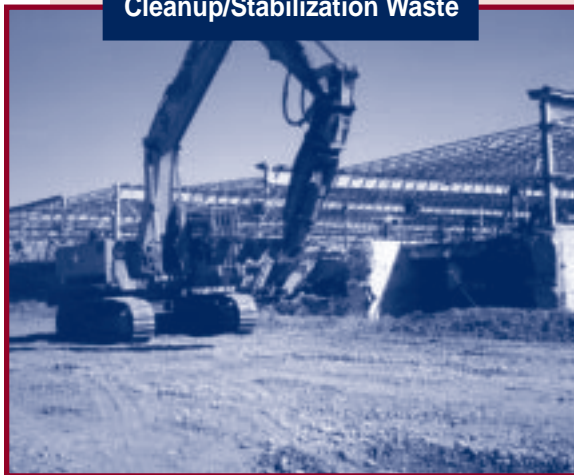
* One cubic meter is assumed to be equivalent to one metric ton.

Routine Operations Waste



Routine operations waste is associated with ongoing missions and activities at a site. For example, personal protective equipment waste is generated on a daily basis as workers enter Radiological Control Areas.

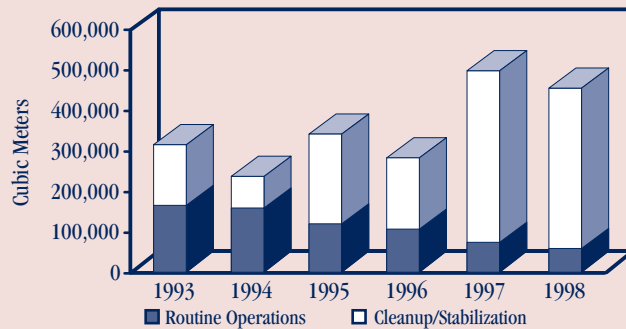
Cleanup/Stabilization Waste



Cleanup/Stabilization waste is associated with site closure or environmental restoration. For example, demolition of buildings generates scrap steel, lead, soil, and concrete.

Although the Pollution Prevention Program has produced rapid and impressive results, there is more work to be done. While routine operations waste generation is decreasing, waste generation from cleanup/stabilization activities is increasing, as DOE continues to maintain an accelerated schedule to cleanup its legacy wastes.

Routine Operations and Cleanup/Stabilization Waste Generation



Even with this accelerated cleanup schedule, DOE is committed to preserving the environment through pollution prevention, and has set an aggressive goal for a 10 percent annual reduction in waste generation from cleanup/stabilization activities beginning in Fiscal Year 1999.

DOE Recycles ... More Than Just Paper and Aluminum Cans

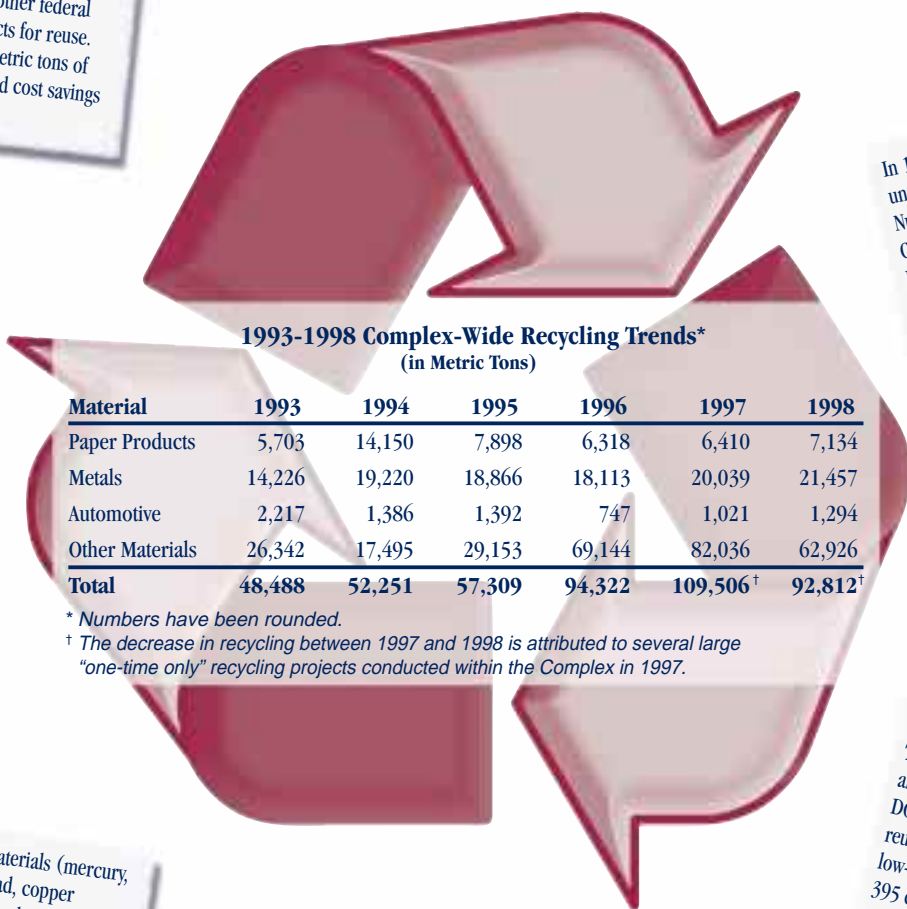
In 1998, excess materials from the **Idaho National Engineering and Environmental Laboratory**, including tools, building materials, and computer, communication, industrial, and automotive equipment, were sent to other DOE sites, energy-related university laboratories, state offices, other federal agencies, and school districts for reuse. This activity reduced 485 metric tons of sanitary waste, for a reported cost savings of \$3.2 million.

In 1998, the National Center of Excellence for Metals Recycle facilitated the recycling of metal and concrete from the Tower Shielding Facility at the **Oak Ridge National Laboratory**. This activity reduced 497 metric tons of sanitary waste, for a reported cost savings of \$2.2 million.

In 1998, 278 concrete blocks from the decommissioning of Building 20 at the **Energy Technology Engineering Center** were reused offsite in the construction of flood control levees for the Santa Clara River. This activity reduced 1,460 metric tons of sanitary waste, for a reported cost savings of \$302,000.

In 1995, the **Hanford Site** sold unneeded nitric acid to the British Nuclear Fuels Private Limited Company for reprocessing in England. This activity reduced 1,332 cubic meters of low-level mixed waste, for a reported cost savings of approximately \$5 million.

In 1997, the **Savannah River Site** diverted coal from the sanitary wastestream for reuse as road base. This activity reduced 13,063 metric tons of sanitary waste, for a reported cost savings of \$11 million.



* Numbers have been rounded.
 † The decrease in recycling between 1997 and 1998 is attributed to several large "one-time only" recycling projects conducted within the Complex in 1997.

In 1996, hazardous materials (mercury, solvents, oils, silver, lead, copper chloride solution, ion exchange resins, acids, batteries, capacitors, ballasts, and gas cylinders) from various locations throughout the **Los Alamos National Laboratory** were sent offsite for recycling instead of being disposed. This activity reduced 64 metric tons of hazardous waste, for a reported cost savings of \$991,300.

In 1997 and 1998, **Argonne National Laboratory – East** recycled a significant portion of its construction and demolition wastestream. This activity reduced 11,282 metric tons of sanitary waste, for a reported cost savings of \$240,700 over the two-year period.

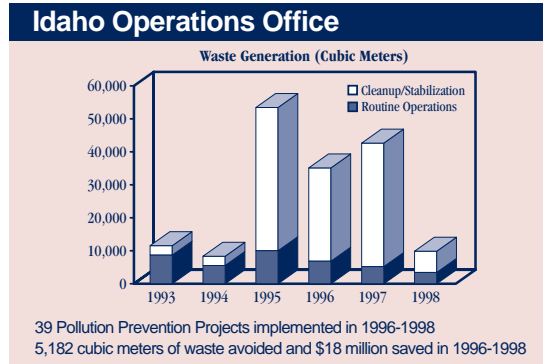
In 1998, the **East Tennessee Technology Park** delivered vacant and decontaminated buildings to DOE Oak Ridge Operations for reuse. This activity reduced low-level radioactive waste by 395 cubic meters, low-level mixed waste by 119 cubic meters, and hazardous waste by 83 metric tons, for a total reported cost savings of \$2.6 million.

Notes: As a point of comparison, the average bathtub filled with one foot of water has a volume of approximately 0.5 cubic meters, and the average sport utility vehicle weighs approximately two metric tons. Reported cost savings consist primarily of avoided waste management costs.

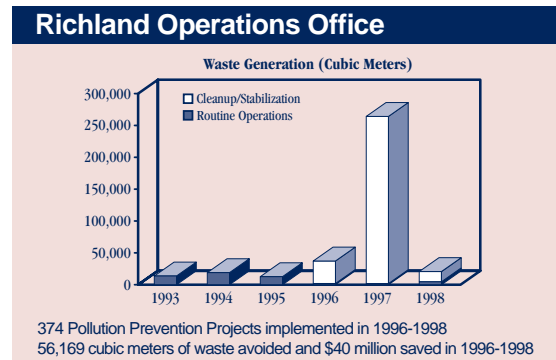
Waste Generation and Pollution Prevention by Operations/Field Office

Each site within an Operations/Field Office makes an important contribution toward meeting DOE's Complex-wide goals for reducing routine operations waste generation, while striving to cleanup as many contaminated sites as possible by the year 2006, all in an environmentally sound and cost-effective manner.

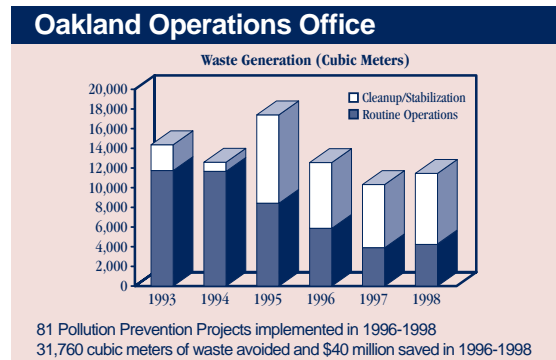
Sites are recognized for their achievements in pollution prevention through annual awards such as DOE's Pollution Prevention Awards, and the White House Closing the Circle Awards, which acknowledge environmental excellence in the Federal government.



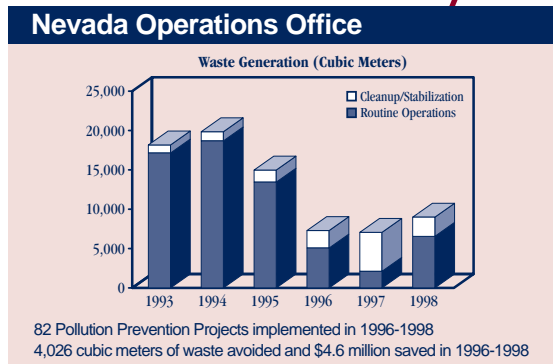
Idaho National Engineering and Environmental Laboratory – Shared in a 1999 Complex-Wide Achievement Pollution Prevention Award for Designing Pollution Prevention into DOE facilities.



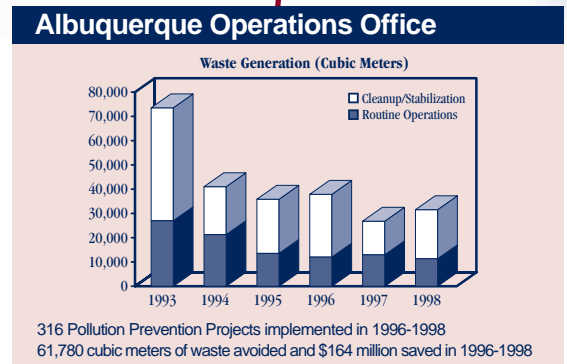
Hanford Site – A 1998 DOE Pollution Prevention Award Winner in Public Outreach and Partnership for assisting small businesses in applying pollution prevention.



Lawrence Livermore National Laboratory – A 1995 DOE Pollution Prevention Award Winner in Radioactive/Hazardous Waste Recycling for use of the Chemical Exchange Warehouse (CHEW) in avoiding disposal of surplus chemicals, and for the recycling efforts of the Hazardous Waste Management Division.

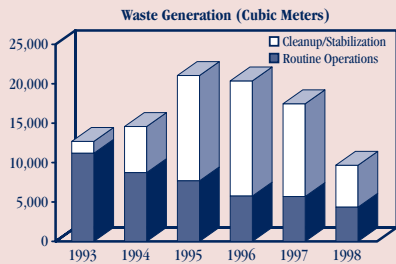


Nevada Test Site – A 1998 DOE Pollution Prevention Award Winner in Radioactive/Hazardous Waste Recycling for the Cotter Concentrate Project, which changed the way a radioactive material is recycled, eliminating two years from a process and saving \$3 million.



Pantex Plant – A 1996 White House Closing the Circle Award Winner as a Model Facility for recycling and waste prevention, including reducing hazardous waste generation by 98 percent since 1987.

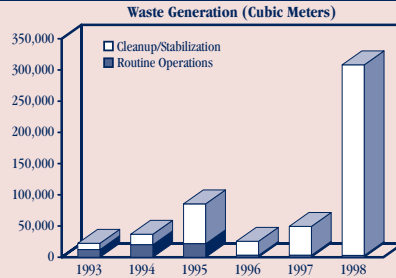
Chicago Operations Office



209 Pollution Prevention Projects implemented in 1996-1998
52,914 cubic meters of waste avoided and \$11 million saved in 1996-1998

Argonne National Laboratory - East – A 1995 Pollution Prevention Award Winner in Commitment, Participation, and Partnership for revitalizing a Chicago neighborhood by developing low-cost, energy efficient housing.

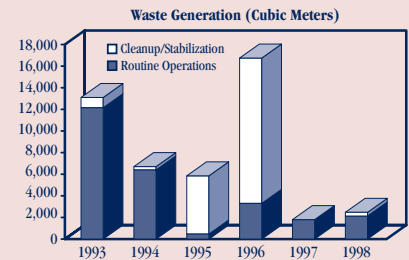
Ohio Field Office



98 Pollution Prevention Projects implemented in 1996-1998
4,958 cubic meters of waste avoided and \$7.4 million saved in 1996-1998

Fernald Environmental Management Project – Featured in a 1998 issue of *DOE This Month* for its recycling efforts, including the donation or sale of over 400,000 pounds of excess non-hazardous chemicals to local schools and communities.

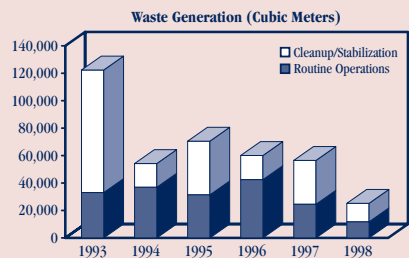
Headquarters



58 Pollution Prevention Projects implemented in 1996-1998
19,620 cubic meters of waste avoided and \$707,000 saved in 1996-1998

Federal Energy Technology Center (Pittsburgh and Morgantown) – A 1998 DOE Pollution Prevention Award Winner in Information Sharing for sharing information on recycling and affirmative procurement activities with workers and the surrounding communities.

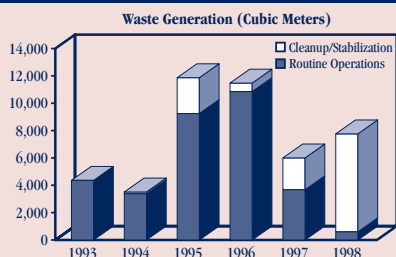
Oak Ridge Operations Office



288 Pollution Prevention Projects implemented in 1996-1998
122,131 cubic meters of waste avoided and \$72 million saved in 1996-1998

Oak Ridge Operations Office – A 1998 DOE Pollution Prevention Award Winner in Environmental Restoration for the design of a passive treatment system for the Chestnut Ridge Filled Coal Ash Pond, which incorporated human engineering and natural systems.

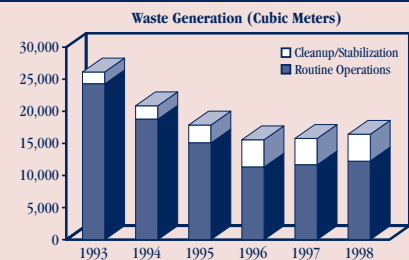
Rocky Flats Field Office



66 Pollution Prevention Projects implemented in 1996-1998
4,583 cubic meters of waste avoided and \$624,000 saved in 1996-1998

Rocky Flats Environmental Technology Site – A 1994 DOE Pollution Prevention Award Winner for Radioactive/Hazardous Waste Recycling for the use of a pelletized carbon dioxide cleaning system for decontaminating metal.

Savannah River Operations Office



200 Pollution Prevention Projects implemented in 1996-1998
28,163 cubic meters of waste avoided and \$46 million saved in 1996-1998

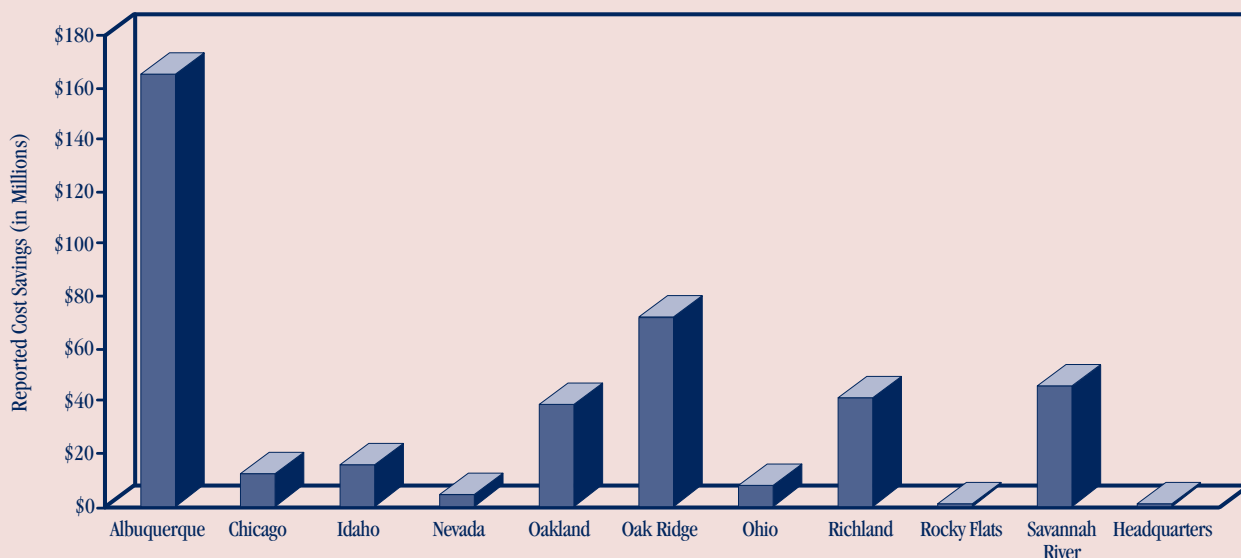
Savannah River Operations Office – A 1998 DOE Pollution Prevention Award Winner in Complex-Wide Achievement for utilizing performance-based incentives to motivate waste reduction, saving \$11 million, and reducing over 2,000 cubic meters of waste in Fiscal Year 1997.

**DOE ... Leading the Way
in Pollution Prevention**

Pollution Prevention Success Stories by Operations/Field Office

The implementation of pollution prevention projects has been instrumental in helping DOE to achieve its Complex-wide waste reduction goals. Between 1996 and 1998, DOE sites have implemented over 1,800 pollution prevention projects, and have avoided approximately 390,000 cubic meters of waste, for a reported cost savings/avoidance of \$405 million. Success stories across the Complex are highlighted below.

1996-1998 Reported Cost Savings from Pollution Prevention Projects by Operations/Field Office*



* Note that pollution prevention budgets vary greatly by site and Operations/Field Office, and reported cost savings are primarily avoided waste management costs.

Albuquerque Operations Office

In 1998, the **Los Alamos National Laboratory** recycled lead and steel material from the Technical Area-53 accelerator facility. The material, which was thought to be low-level mixed waste due to its origin and lead content, was surveyed and determined not to be activated, so it was able to be recycled. This segregation activity reduced cleanup/stabilization low-level mixed waste by approximately 338 cubic meters, for a reported cost savings of \$25.5 million.

Chicago Operations Office

In 1998, the use of in-situ techniques to decontaminate soil eliminated a major hazardous wastestream at the **Argonne National Laboratory - East**. "Optimization of the Enhanced Soil Mixing by Zero-Valent Ion Addition" is an enhanced soil mixing process that removes volatile organic compounds from the soil, resulting in increased removal efficiency and reduced waste volume. This segregation activity

reduced cleanup/stabilization hazardous waste by approximately 15,300 metric tons, for a reported cost savings of \$6 million.

Idaho Operations Office

In 1996, the **Idaho National Engineering and Environmental Laboratory** replaced a hazardous nitric acid cleaning process at the Specific Manufacturing Facility with an environmentally-friendly high pressure water cleaning system. This project eliminated nitrogen oxides emissions and nitric acid safety concerns. This source reduction activity reduced hazardous waste by six metric tons, for a reported cost savings of \$1 million.

Nevada Operations Office

In 1997, the **Nevada Test Site** recycled uranium-bearing material. This recycle/reuse activity reduced cleanup/stabilization low-level radioactive waste by 197 cubic meters, for a reported cost savings of \$3 million.

Oakland Operations Office

In 1996, lightly activated concrete shielding blocks at the **Lawrence Berkeley National Laboratory** were shipped to the **Brookhaven National Laboratory** for reuse in Brookhaven's Relativistic Heavy Ion Collider. This recycle/reuse activity reduced cleanup/stabilization low-level radioactive waste by 5,000 cubic meters, for a reported cost savings of \$18.8 million.

Oak Ridge Operations Office

In 1998, the High Ranking Facilities Deactivation Project at the **Oak Ridge National Laboratory** conducted radiological surveys to segregate free-releasable items from activated and contaminated ones. After the survey, 515 tons of material were found to be releasable. This segregation activity reduced approximately 467 cubic meters of cleanup/stabilization low-level radioactive waste, for a reported cost savings of \$2.3 million.

Ohio Field Office

In 1996, during the removal of radioactively-contaminated drain lines at the **Battelle Columbus Laboratories**, hazardous materials were sorted and managed separately. This segregation effort reduced approximately 90 cubic meters of low-level mixed waste, for a reported cost savings of \$4 million.

Richland Operations Office

In 1997, the **Hanford Site** installed a probe in the High-Level Waste Tank 241-AN-107 to monitor for corrosion, allowing the site to more closely regulate and reduce the volume of sodium hydroxide added to the tank for corrosion control. This source reduction activity reduced approximately seven cubic meters of routine operations high-level waste, for a reported cost savings of \$2.2 million.

Rocky Flats Field Office

In 1998, the **Rocky Flats Environmental Technology Site** shipped radioactively-contaminated scrap metal to a vendor for processing and reuse as shield blocks. This recycle/reuse activity reduced cleanup/stabilization low-level radioactive waste by approximately 453 cubic meters, for a reported cost savings of \$120,000.

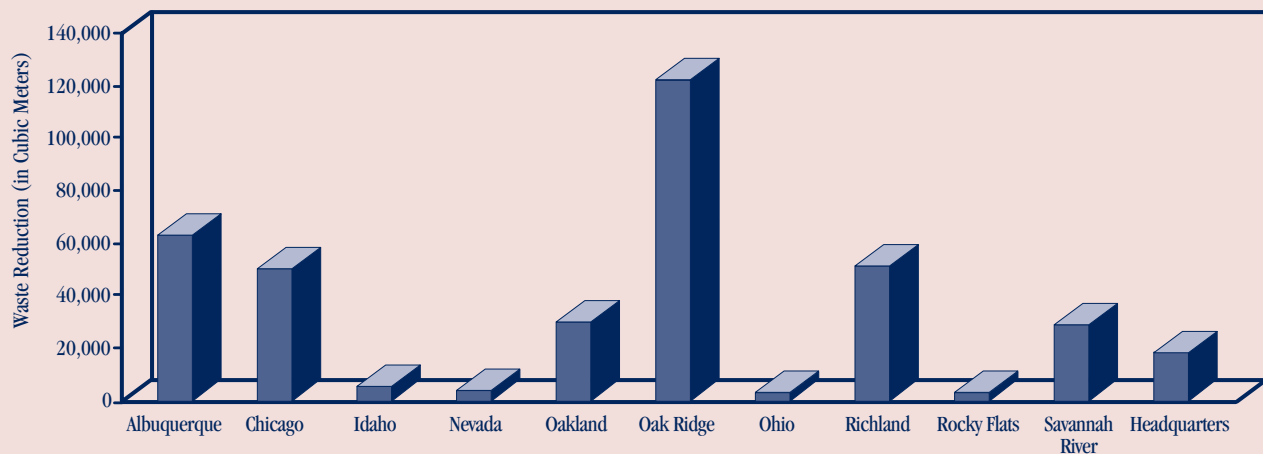
Savannah River Operations Office

In 1998, the **Savannah River Site** completed more than 100 Radiological Control Area rollbacks, eliminating operator exposure, as well as the generation of low-level radioactive waste and laundry. This source reduction activity reduced routine operations low-level radioactive waste by approximately 509 cubic meters, for a reported cost savings of \$5 million.

Headquarters

In 1996, the **Western Area Power Administration** implemented an aggressive sampling program during the decommissioning and remediation of a major capacitor bank that greatly reduced the amount of soil, steel, and debris removed for disposal. This segregation activity reduced hazardous waste by approximately 1,500 metric tons, for a reported cost savings of \$400,000.

1996-1998 Waste Reduction from Pollution Prevention Projects by Operations/Field Office*

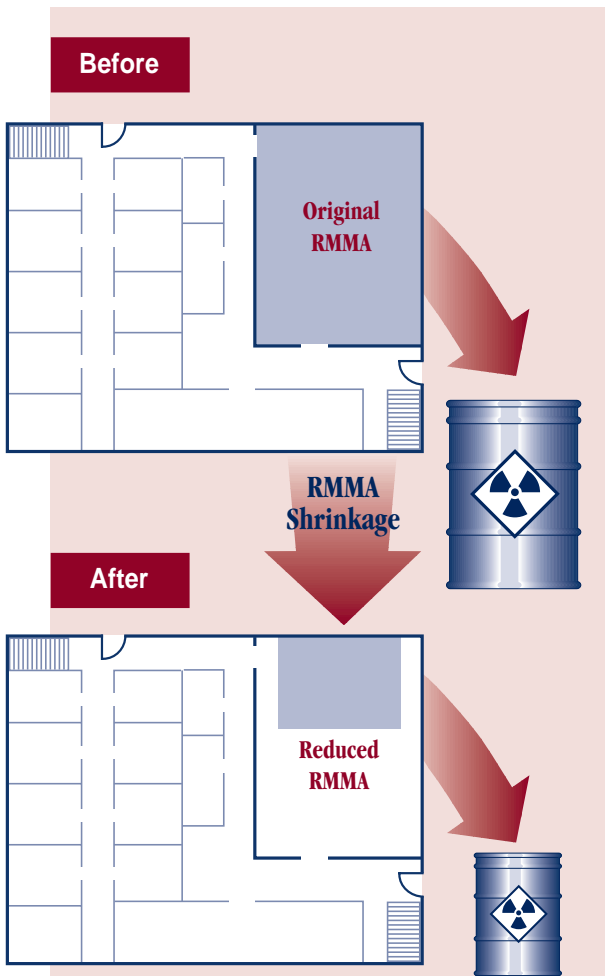


* Note that pollution prevention budgets vary greatly by site and Operations/Field Office.

DOE Pollution Prevention Investments Save Dollars

DOE has implemented three key pilot programs and pollution prevention initiatives that have proven to be extremely cost-effective, utilize contract incentives to motivate waste reduction, and reduce the environmental costs of a product, process, or facility over its lifetime. These programs are described in the following pages, and prove that pollution prevention is a cost-effective business strategy, and a wise investment for DOE.

The High Return-on-Investment (ROI) Program



Before the implementation of this ROI project at the Los Alamos National Laboratory, all materials removed from RMMAs were disposed as low-level radioactive waste. As a result of the project, a total of 166,703 square feet of RMMAs were eliminated, and 340 cubic meters of low-level radioactive waste and 40 cubic meters of transuranic waste were reduced annually.

Project Cost: \$570,000
Life-Cycle Savings: \$15 million
Return-on-Investment: 590 percent

The High Return-on-Investment (ROI) program was initiated by the Department of Energy's Pollution Prevention Executive Board in 1994, as a Headquarters managed and directed pilot program. The program's purpose was to obtain operational and waste management cost savings by investing funds in pollution prevention projects that pay for themselves in less than three years.

Between 1994 and 1996, 39 projects from various Operations/Field Offices were funded by the Headquarters pilot program. As of March 1999, the total life-cycle savings of these projects is estimated to be \$79 million, almost 10 times the initial investment of \$8 million, demonstrating that the ROI concept works.

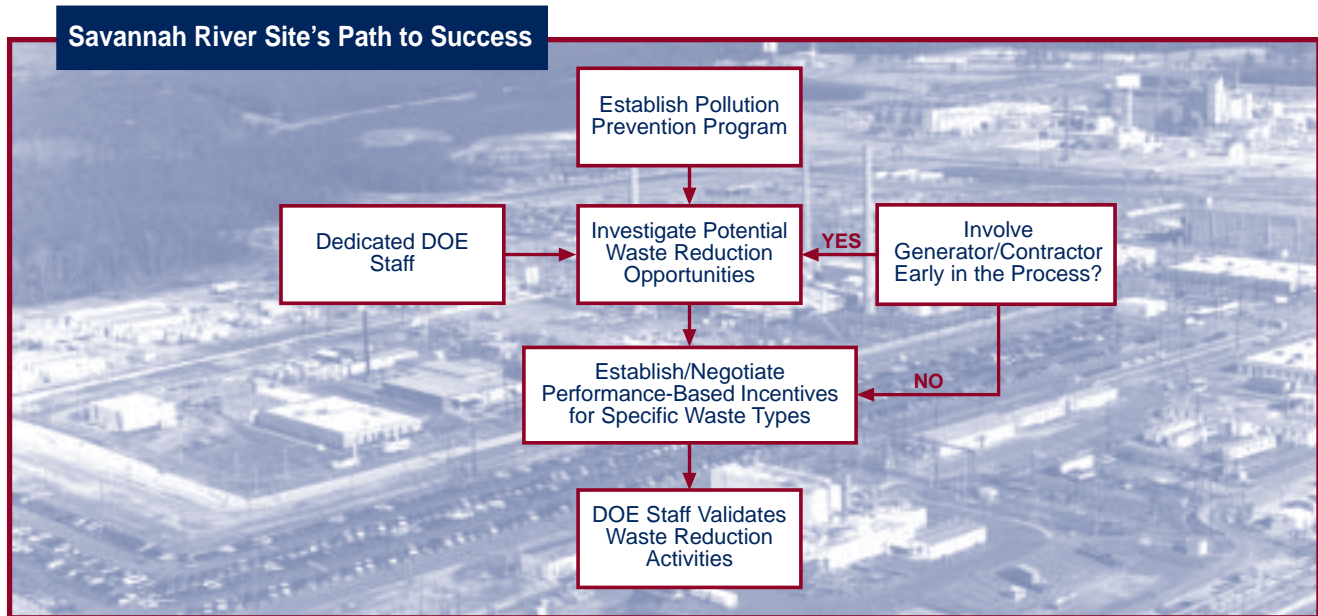
Beginning in 1996, Headquarters involvement in ROI projects was phased out, and Operations/Field Offices implemented their own version of the program on a limited basis, with limited funds. Between January 1994 and May 1998, 262 projects received funding, at a cost of \$19 million, with an estimated total life-cycle savings of \$311 million.

An example of one of the Headquarters funded ROI projects is the Radioactive Materials Management Area (RMMA) Source Elimination project at the Los Alamos National Laboratory. In the past, all used materials removed from RMMAs were considered low-level radioactive waste and disposed, even though much of the material was clean. This practice resulted in the rapid and unnecessary consumption of the site's low-level radioactive waste disposal capacity. In addition, many materials onsite were handled as transuranic waste, even though much of the material could be classified as low-level radioactive waste, which is cheaper and easier to manage than transuranic waste.

This ROI project minimized waste generation by reducing RMMAs to the minimum area required to conduct work and control radioactive materials, and by improving transuranic and low-level radioactive waste sorting and classification procedures. For an initial investment of \$570,000, the project avoided 380 cubic meters of waste annually (340 cubic meters of low-level radioactive and 40 cubic meters of transuranic waste), for a total life-cycle savings of \$15 million, a return-on-investment of 590 percent.

Building Pollution Prevention Incentives into Operating Contracts

Contractors are motivated to reduce waste generation through the use of Performance-Based Incentives (PBIs), which are incorporated into a site's award fee process. This initiative has proven successful at the Savannah River Site, which has been working to implement PBIs since 1995.



The first PBI for reducing waste generation was established by the Savannah River Operations Office Pollution Prevention Team in Fiscal Year (FY) 1995. However, due to the lack of DOE staff dedicated to the program and no contractor involvement, the PBI had little technical basis, and did not motivate performance. During the course of the year, dedicated federal staff were assigned to the program, and generator involvement increased as the foundation for the program was established.

In FY 1996, the federal staff conducted extensive research into potential waste reduction opportunities,

benchmarked industry's best practices, and used DOE's Waste Forecast (a tool for estimating waste generation) to develop more credible PBIs, which were negotiated with the contractors. In FY 1997, contractors were involved at the start in identifying waste reduction opportunities and in establishing PBIs.

In FY 1996, pollution prevention projects conducted at the Savannah River Site reduced 7,700 cubic meters of waste through the use of PBIs, and achieved a cost avoidance of \$18 million dollars. In FY 1997, more than 2,000 cubic meters of waste was reduced for a

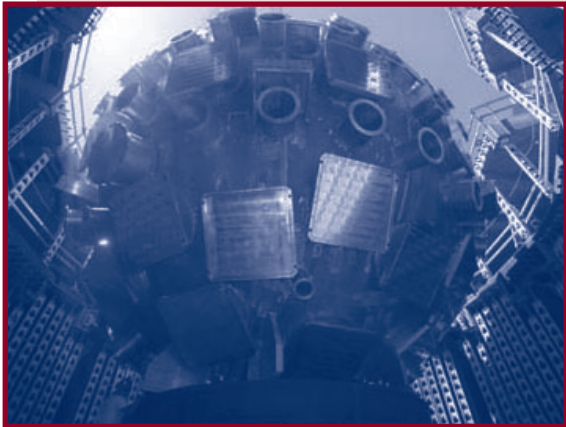
cost avoidance of \$11 million; and in FY 1998, 9,500 cubic meters of waste was reduced, for a cost avoidance of \$7.4 million. These activities earned the Savannah River Operations Office a 1998 Pollution Prevention Award for Complex-Wide Achievement.

The use of PBIs to motivate waste reduction has proven to be a cost-effective business strategy, when implemented by dedicated DOE staff, with an up-front investment of resources and contractor involvement.

Designing for Pollution Prevention and Energy Efficiency



The target chamber is raised for positioning.



The target chamber is lowered into place.

DOE has developed a set of tools for incorporating Pollution Prevention (P2) and energy efficiency into the design stage of products, processes, and facilities (“P2 in Design”). Implementing P2 in Design can significantly reduce waste generation levels, waste management costs, and energy costs over the life of a facility.

Pollution prevention is currently being designed into the construction and operation of the National Ignition Facility (NIF) at the Lawrence Livermore National Laboratory. The NIF will be an experimental laboratory facility that will contain the world’s most powerful laser. The laser will consist of 192 laser beams whose energy can be focused simultaneously onto a target. The NIF will further DOE’s strategic missions in national security, energy resources, science and technology, and industrial competitiveness.

As of September 1998, the Lawrence Livermore National Laboratory had reused over 280,000 metric tons of soil excavated for construction of the facility, and had recycled 14 metric tons of wood from the project through an offsite vendor.

The NIF has a comprehensive Pollution Prevention and Waste Minimization Plan to guide it through construction, operation, and decommissioning. The Plan is a key tool in anticipating, minimizing, and mitigating environmental impacts and waste generation, and evaluates pollution prevention opportunities for primary wastestreams, including a vacuum oil pump, molecular sieves, personal protective equipment, filters, target chamber decontamination, chamber hardware, oil filters, capacitors, and chemicals.



DOE's Vision for the Future

In the Words of Secretary of Energy Bill Richardson:

“I am committed to making the Department of Energy a leader in pollution-free, energy-efficient operations in the Federal Government. To become that leader, we must continually improve our facilities to maximize energy efficiency and must strive toward ‘zero’ waste and emissions.”

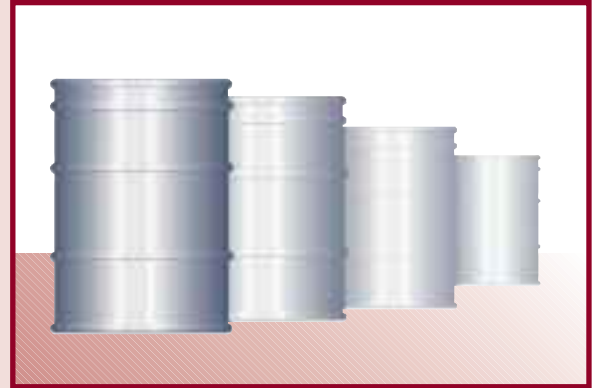
– Bill Richardson
February 26, 1999

DOE's vision for the future will be achieved by designing and operating facilities using pollution prevention processes that lead to zero waste generation; minimizing the release of toxic chemicals, and the use and release of ozone depleting substances and greenhouse gases; increasing the energy efficiency of buildings, laboratories, and production facilities; and purchasing environmentally preferable products and services that meet mission needs.

DOE's success in achieving its vision will be measured by progress toward the Secretarial Goals. New Secretarial Goals will replace the December 31, 1999 Secretarial Goals.

The achievement of these Secretarial Goals will require the continued implementation of pollution prevention projects, key pilot programs, and initiatives. The support of all DOE site and laboratory managers, field personnel, and contractors will enable DOE to be a leader in pollution prevention and energy efficiency.

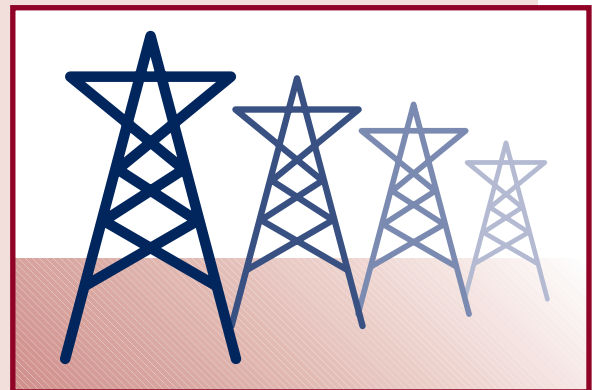
Waste Generation (Cubic Meters)



Toxic Chemicals (Pounds)



Energy Use (Kilowatts)



A l b u q u e r q u e



**National
Pollution
Prevention
Program**

United States Department of Energy

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